

WHAT IS CLAIMED IS:

1. An inkjet printhead having an array of printing elements, where first and second printing elements
5 which discharge relatively different amounts of ink are arranged on the same array in a predetermined direction, comprising:

storage means for sequentially storing print data that is serially inputted;

10 holding means for holding the print data stored in said storage means; and

a driving control circuit for driving respective printing elements in accordance with a selection signal indicative of which of the first or second printing 15 element is to be driven, the print data held by said holding means, and a driving signal indicative of a driving period,

wherein the print data is inputted to either the first or second printing element.

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2. The inkjet printhead according to claim 1, wherein the array of printing elements includes a same number of the first and second printing elements that are arranged alternately, and is configured such that 25 one print data is inputted to a pair of adjacent first and second printing elements.

3. The inkjet printhead according to claim 1,
wherein said printhead is configured such that the
first and second printing elements are divided into a
plurality of blocks to be driven, each including an
5 equal number of first and second printing elements,
wherein the print data is inputted to each of the
plurality of blocks, and

10 said driving control circuit drives respective
printing elements in accordance with the selection
signal, the print data held by said holding means, the
driving signal, and a block signal designating a block
to be driven.

4. The inkjet printhead according to claim 1,
15 wherein the selection signal is serially inputted
subsequent to the print data, and is separated from an
output of said holding means.

5. The inkjet printhead according to claim 1,
20 wherein the array of printing elements is provided for
at least two colors so as to enable color printing
using plural colors.

6. The inkjet printhead according to claim 5,
25 wherein the plural colors include cyan, magenta,
yellow, and black.

7. The inkjet printhead according to claim 5,
wherein the selection signal is separately inputted to
the at least two arrays of printing elements.

5 8. The inkjet printhead according to claim 5,
wherein the selection signal is commonly inputted to
the at least two arrays of printing elements.

9. The inkjet printhead according to claim 1,
10 wherein the printing elements perform printing by
utilizing heat energy.

10. A driving method of an inkjet printhead having an
array of printing elements, where first and second
15 printing elements which discharge relatively different
amounts of ink are arranged on the same array in a
predetermined direction, said method comprising:

a data input step of serially inputting print
data for the first or second printing element;

20 a storing step of sequentially storing the
inputted print data;

a holding step of holding the stored print data;

25 a selecting step of inputting a selection signal,
indicative of which of the first or second printing
element is to be driven;

a driving designation step of inputting a driving
signal indicative of a driving period; and

a driving control step of driving respective printing elements in accordance with the print data held, the selection signal, and the driving signal.

5 11. The driving method of an inkjet printhead according to claim 10, wherein the array of printing elements includes a same number of the first and second printing elements that are arranged alternately, and in said data input step, one print data is inputted to a
10 pair of adjacent first and second printing elements.

12. The driving method of an inkjet printhead according to claim 10, further comprising:
 a dividing step of dividing the first and second printing elements into a plurality of blocks, each including an equal number of first and second printing elements; and
 a block designating step of inputting a block signal that designates a block to be driven,
20 wherein in said data input step, the print data is inputted to each of the plurality of blocks, and in said driving control step, respective printing elements are driven in accordance with the selection signal, the print data held, the driving signal, and the block signal.
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13. The driving method of an inkjet printhead

according to claim 10, wherein said data input step further comprises a step of serially inputting the selection signal subsequent to the print data, and separating the selection signal from the print data

5 held.

14. The driving method of an inkjet printhead according to claim 10, wherein the printhead has the array of printing elements for at least two colors so
10 as to enable color printing using plural colors, and in said selecting step, the selection signal is separately inputted to the at least two arrays of printing elements.

15 15. The driving method of an inkjet printhead according to claim 10, wherein the printhead has the array of printing elements for at least two colors so as to enable color printing using plural colors, and in said selecting step, the selection signal is
20 commonly inputted to the at least two arrays of printing elements.

16. An inkjet printhead having first and second printing elements which discharge relatively different amounts of ink, comprising:
25 storage means for sequentially storing print data that is serially inputted;

holding means for holding the print data stored
in said storage means;

a driving control circuit for driving respective
printing elements in accordance with a selection signal
5 indicative of which of the first or second printing
element is to be driven, the print data held by said
holding means, and a driving signal indicative of a
driving period; and

10 a signal line, to which the print data and the
selection signal are serially inputted.

17. The inkjet printhead according to claim 16,
wherein the print data is serially inputted to said
signal line subsequent to the selection signal.

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18. The inkjet printhead according to claim 17,
wherein data for the first or second printing element
is inputted per one input of the print data.

20 19. A driving method of an inkjet printhead having
first and second printing elements which discharge
relatively different amounts of ink, said method
comprising:

a storing step of sequentially storing print data
25 that is serially inputted;

a holding step of holding the print data stored;
an input step of inputting a selection signal

indicative of which of the first or second printing element is to be driven; and

a driving control step of driving respective printing elements in accordance with the print data held, and a driving signal indicative of a driving period,

wherein the print data and the selection signal are serially inputted from a same signal line.

10 20. The driving method of an inkjet printhead according to claim 19, wherein the print data is serially inputted to the signal line subsequent to the selection signal.

15 21. The driving method of an inkjet printhead according to claim 19, wherein data for the first or second printing element is inputted per one input of the print data.

20 22. A substrate for an inkjet printhead which discharges ink by utilizing heat energy generated by a plurality of heaters incorporated in the substrate, said heaters divided into m numbers of groups each having n numbers of heaters, said substrate comprising:
25 m x n numbers of driving circuits, provided in correspondence with each of the heaters, for driving each of the heaters;

a selection data transfer circuit for separating
input data into image data for driving m numbers of
heaters and a selection signal for selecting m numbers
of groups and n numbers of heaters constituting each
5 group;

a holding circuit for inputting the image data
for driving the m numbers of heaters, received from
said selection data transfer circuit, to supply the
image data in units of each group to the heaters
10 constituting each of the m numbers of groups; and
a selection data holding circuit for inputting
the selection signal for selecting the m numbers of
groups and n numbers of heaters constituting each
group, received from said selection data transfer
15 circuit, to select the heaters to be driven via said
driving circuits,

wherein the n numbers of heaters are arranged
opposite to each other in a zigzag manner with an ink
supplying orifice on the center, and said selection
20 data holding circuit selects one of the n numbers of
heaters constituting each group.

23. The substrate for an inkjet printhead according
to claim 22, wherein the n numbers of heaters have an
25 equal size, and amounts of ink discharged from the
heaters by heat energy generated are equal.

24. The substrate for an inkjet printhead according to claim 22, wherein the n number of heaters have different sizes, and amounts of ink discharged from the heaters by heat energy generated are different.

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25. The substrate for an inkjet printhead according to claim 22, wherein each of said driving circuits is configured with a DMOS transistor.

10 26. An inkjet printhead employing a substrate for an inkjet printhead which discharges ink by utilizing heat energy generated by a plurality of heaters incorporated in the substrate, said heaters divided into m numbers of groups each having n numbers of heaters, said
15 substrate comprising:

$m \times n$ numbers of driving circuits, provided in correspondence with each of the heaters, for driving each of the heaters;

20 a selection data transfer circuit for separating input data into image data for driving m numbers of heaters and a selection signal for selecting m numbers of groups and n numbers of heaters constituting each group;

25 a holding circuit for inputting the image data for driving the m numbers of heaters, received from said selection data transfer circuit, to supply the image data in units of each group to the heaters

constituting each of the m numbers of groups; and
a selection data holding circuit for inputting
the selection signal for selecting the m numbers of
groups and n numbers of heaters constituting each
5 group, received from said selection data transfer
circuit, to select the heaters to be driven via said
driving circuits,

wherein the n numbers of heaters are arranged
opposite to each other in a zigzag manner with an ink
10 supplying orifice on the center, and said selection
data holding circuit selects one of the n numbers of
heaters constituting each group.